STATE ROUTE 14

TRANSPORTATION CONCEPT REPORT

CALTRANS DISTRICT 9

Office of System Planning
October 2004

STATE ROUTE 14

TRANSPORTATION CONCEPT REPORT

PREPARED
BY
CALIFORNIA DEPARTMENT OF TRANSPORTATION
DISTRICT 9
OFFICE OF SYSTEM PLANNING

2004

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STATE ROUTE 14 TRANSPORTATION CONCEPT REPORT

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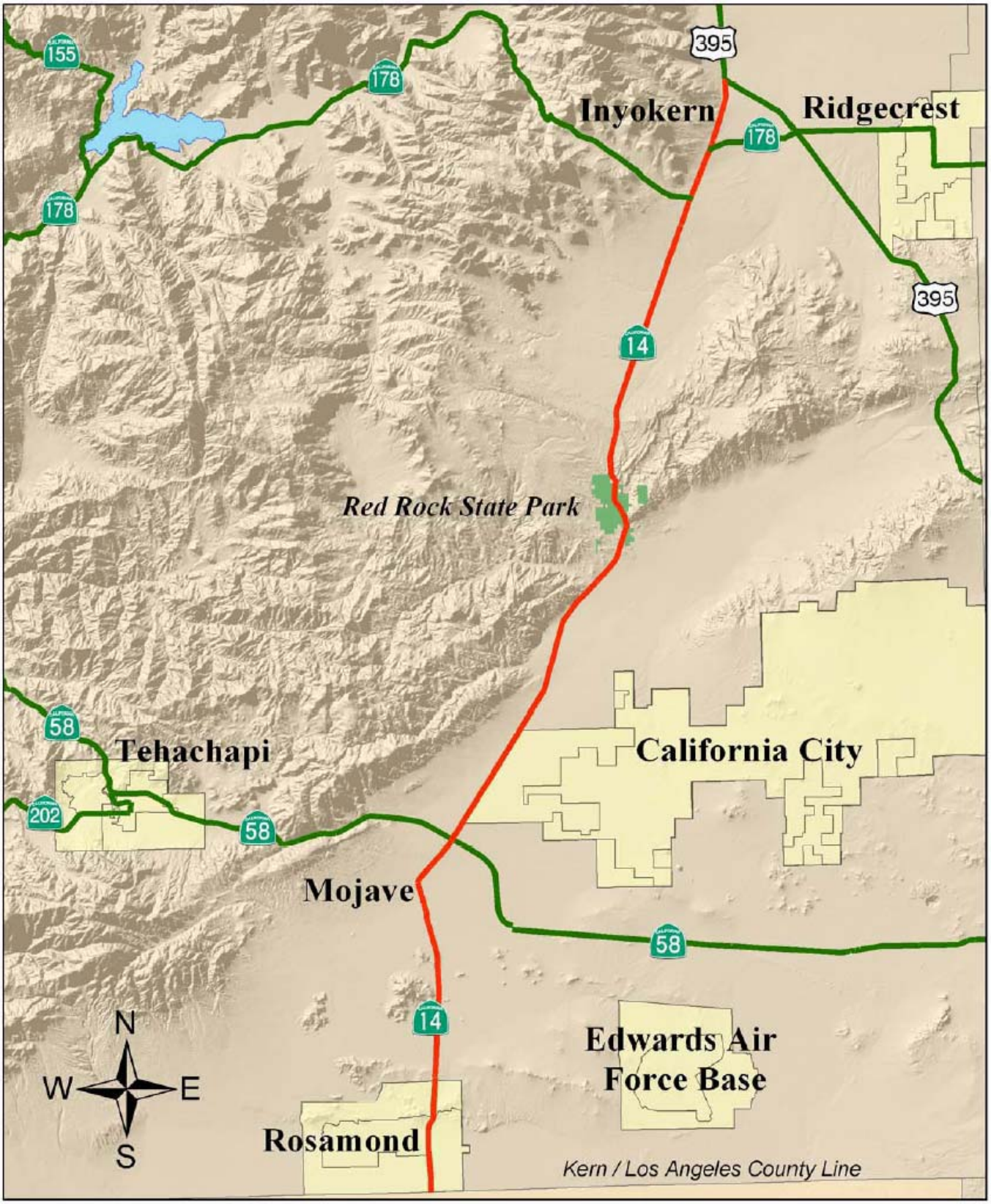


State Route 14 Transportation Concept Report
Summary

INTRODUCTION

The Transportation Concept Report (TCR) is a long range planning document that describes the current characteristics of the transportation corridor and establishes a twenty-year planning concept. The TCR defines the California Department of Transportation (Caltrans) goals for the development of the transportation corridor in terms of Level of Service (LOS) and type of facilities, and broadly identifies the improvements needed to reach those goals.

Kern County is part of Caltrans District 6. Prior to the mid 1990's the eastern part of Kern County, including all of State Route (SR) 14 was part of District 9. District 9 has retained many functions in eastern Kern County including responsibility for the preparation of TCR's for SR 14. SR 14 TCR's are prepared in collaboration with District 6 and local and regional agencies.

All information in this TCR is subject to revision as conditions change and new information is obtained. Consequently, the nature and the size of identified improvements may change as they move through the project development stages. Final determinations are made at the time of project planning, environmental analysis, and design.

LOS calculations are based on the year 2000 Highway Capacity Manual (HCM). The 2000 HCM includes substantial changes to capacity calculations compared to past editions of the HCM. As a result, LOS calculations will differ from former reports or studies that are based on earlier editions of the HCM.

ROUTE SYNOPSIS

State Route (SR) 14 begins at the junction of Interstate 5 north of San Fernando in Los Angeles County (Caltrans District 7). The route extends northerly, through the Lancaster/Palmdale areas into the Mojave Desert and is the main street through the community of Mojave. North of Mojave, SR 14 intersects with SR 58 and SR 178, and terminates at the junction of US 395.

This TCR covers that portion of SR 14 within eastern Kern County (Los Angeles County line to the junction of US 395).

ROUTE HISTORY

For thousands of years prior to the arrival of Europeans settlers, Native Americans used the State Route 14 corridor as a trade route. The corridor was also a passage for driving large flocks of sheep, and stagecoach trail.

In 1919, voters approved the State's third Highway Bond Act totaling $40,000,000. Part of this statewide bond was used to provide revenues for the construction of a highway between Bishop and Los Angeles, which is now present-day highways SR 14 and US 395. The highway was completed, and incorporated into the California State Highway System in 1925. During the initial 1934 state signage, the route was designated as State Route 23 and signed California Sign Route 7. In 1937, Route 23 was signed as "US 6".

In 1964, US 6 was shortened to its present day terminus in Bishop, and the segment from Interstate 5 to Inyokern was signed as SR 14; the segment from Bishop to Inyokern was signed as US 395.

ROUTE DESCRIPTION

SR 14, combined with US 395, is a part of a major transportation corridor, connecting the Eastern Sierra and Western Nevada to the Southern California region. The Caltrans "Interregional Transportation Strategic Plan" identifies the SR 14/US 395 corridor as a High Emphasis - Focus Route. The High Emphasis - Focus Route designation of the SR 14/US 395 corridor indicates that significant progress should occur towards programming improvements to the routes in the near terms so that the routes are constructed to minimum facility standards by the end of the twenty-year planning horizon. Completion of the High Emphasis - Focus Routes in the State of California to minimum facility standards will assure a statewide trunk system is complete for higher volume interregional trip movements.

The portion of SR 14 from SR 138 near Palmdale to US 395 is officially designated the "*Aerospace Highway*" by ACR 119, Chapter 83, (6/20/2002). This designation is a result of the importance of this area to the aerospace industry, which includes the area adjacent to SR 14 and access to Edwards Air Force Base, the home of the Air Force Flight Test Center, and NASA Dryden Air Force Rocket Propulsion Laboratory. The route is also critical in serving the China Lakes Naval Weapons Center near Ridgecrest.

In Kern County, SR 14 serves as the major access arterial for the communities of Rosamond, Mojave, California City, Inyokern, Ridgecrest, Edwards Air Force Base and the China Lake Naval Weapons Center. A significant amount of commute travel occurs on SR 14 between the Lancaster, Edwards Air Force Base, and Mojave areas. Emerging trends demonstrate that commuters are also traveling from the Mojave and Rosamond areas to Southern California.

The significance of the SR 14/US 395 corridor for recreational use is indicated by the Caltrans District 9 year 2000 Origination and Destination Study. This study indicates

that 60 percent of all vehicles entering the Eastern Sierra region from the south are recreation oriented. The corridor has a significant amount of interstate traffic as well, which is represented by the 12 percent truck traffic along the corridor.

SR 14 is functionally classified as a Rural Principal Arterial, which provides access from Southern California to the Eastern Sierra and the Intermountain West regions. The route is a part of the National Highway System, the California Freeway and Expressway System, the National Truck Network, it is a Lifeline Route, and is a part of the California Interregional Road System. Elevation along in SR 14 varies from 2,072 feet (632 meters) at Jawbone Canyon to 3,299 feet (1,006 meters) at the summit above Red Rock Canyon.

North of Mojave, SR 14 is eligible to become a State Scenic Highway. Open, vast expanses along the route include the Mojave and Indian Wells Valleys, and Red Rock Canyon State Park, which features scenic desert valley floors, buttes, and spectacular rock formations.

PRESENT AND FUTURE OPERATING CONDITIONS

The average vehicle driving on the Two Lane section of the corridor will spend a significant amount of driving time behind a slower moving vehicle. This is especially evident during weekends and holidays when traffic volumes are extremely heavy, causing traffic queuing, driver frustration and frequent unsafe passing maneuvers. Factors contributing to the large portion of the time spent following are the high volumes of recreational vehicles and trucks. Because of the rural nature of the area, drivers of passenger cars tend to travel at a high rate of speed. Since trucks and recreational vehicles are not capable of traveling at sustained high speeds, a large differential in speed occurs between vehicles traveling in the same direction on one travel lane. Flooding and the related debris on the highway, pavement deterioration, lack of paved shoulders and turnouts are other issues on the corridor.

Issues include flash floods, which wash water and debris onto the traveled way, drainage improvements, upgrading to the latest design standards for geometrics, scenic pullouts, and minor realignments should address these concerns as the North Mojave Four Lane at from PM 16.2 to PM 26.6 (KP 26.07 to KP 42.81), and the Freeman Gulch Four Lane at PM 45.4 to PM 62.3 (KP 73.06 to KP 100.26) widening projects are completed on SR 14. As traffic numbers increase, an alternate alignment for SR 14 should be studied that routes vehicles from the south end of Mojave to the junction of SR 58.

EXISTING AND FUTURE DEFICIENCIES

Based on Highway Capacity Manual calculations, SR 14 is currently operating at various LOS from A through D, depending on specific segments of the route. The concept LOS for SR 14 is LOS C. The North Mojave and Freeman Gulch Four Lane widening projects will increase capacity and improve LOS for the deficient segments of SR 14.

As conditions warrant, conversion to freeway standards for the entire length of SR 14 should be implemented during the planning, design, environmental, and construction phase of projects on SR 14.

Within the vicinity of the Mojave community, especially in the surrounding areas where development is likely to occur, the planning of converting conventional highways into freeways, and designing alternate routes should be implemented to resolve potential future capacity issues.

Other safety and operational improvements may be implemented but possible scenic or environmental impacts must be considered.

COMMUNITY ISSUES

Improvements to SR 14 will be planned using a collaborative, interdisciplinary approach involving all stakeholders. Involvement might include community surveys, public meetings and impact studies. This approach should better integrate and balance community, aesthetic, historic, environmental values, and Title VI civil rights, transportation safety, maintenance, and performance goals. Specifically, the communities of Rosamond, Mojave, California City, and Inyokern will be consulted during the planning and construction phases of proposed projects on SR 14.

STATE ROUTE 14 CONCEPT SUMMARY CHART

County	Segment	Post Miles	Post Kilometers	Current Facility	Concept Facility	Ultimate Facility	Current LOS	10-Yr LOS	20-Yr LOS	Concept LOS	Ultimate LOS	Page #
Kern	1	0.00/12.63	0.00/20.33	4F	4F	6F	A	B	B	C	C	8
Kern	2	12.63/19.07	20.33/30.85	4C, 2C	6C	6F	C	C	D	C	C	10
Kern	3	19.07/26.13	30.85/42.07	2C	4F	6F	D	A*	A*	C	C	12
Kern	4	26.13/36.56	42.07/58.86	4E	4F	4F	A	A	A	C	C	14
Kern	5	36.56/45.97	58.86/74.01	4E	4F	4F	A	A	A	C	C	16
Kern	6	45.97/61.97	74.01/99.77	2C	4F	4F	D	A**	A**	C	C	18
Kern	7	61.97/64.56	99.77/103.91	4E	4F	4F	A	A	A	C	C	20

LOS = Level of Service

C = Conventional

E = Expressway

F = Freeway

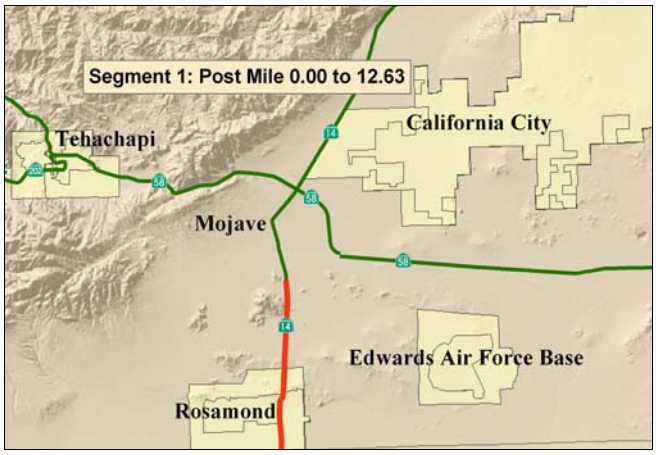
* After Construction of North Mojave Four Lane STIP improvement

** After Construction of Freeman Gulch Four Lane STIP improvement

SR 14 SEGMENT FACT SHEET

Length in km	20.33	**Length mi:**	12.63
KP Back	0	**Back PM**	0
KP Ahead	20.33	**Ahead PM**	12.63
Present Facility	4-Lane Freeway		
Present LOS	A		
Concept Facility	4-Lane Freeway		
Concept LOS	C		
Ultimate Facility	6-Lane Freeway		

Segment Location



Segment Description

This segment is a 4-lane freeway from the Los Angeles County line to the end of the segment at PM 12.63 (KP 20.33). The facility services commuters for the Lancaster/Palmdale, Rosamond, Edwards Air Force Base, and Mojave areas, truck traffic to/from SR 58 and the Eastern Sierra Nevada corridor, as well as recreational motorists. The majority of the freeway is straight and level, with some rolling terrain on the freeway north of the Antelope Valley. The area is susceptible to high winds, which contribute to blowing dust that sometimes impairs visibility for traveling motorists. The potential for substantial land use growth in the valleys of this segment supports the need for upgrading the facility and preserving right of way for future transportation development. There are currently no operational concerns on this segment at this time.

Route Concept Improvement Recommendations

Install additional lanes as needed to achieve an ultimate facility of a 6-lane freeway. Expand inside shoulder width to a total width of 5-ft (1.5 m) paved shoulders. Continue to monitor drainage issues for this segment.

Programmed Projects

No capacity or operational improvements are currently programmed for this segment.

Highway Network Affiliation

Functional Classification: Principal Arterial

National Hwy System	Yes	**Scenic Highway**	Not a Scenic Highway
California Freeway _ Expressway System	Yes	**National Truck Network**	NTN STAA Trucks
STRAHNET	Yes	**Life Line**	Yes
Regionally Significant	Yes	**IRRS**	Yes

Highway Information

	Units	Feet	Meters
Average Median Width		60	20
Average Shoulder Width		11	3
Average Lane Width		12	3.6

SR 14 SEGMENT FACT SHEET

Air Quality Comments

This segment is classified as Serious Non-attainment for Ozone and Moderate Non-attainment for PM10. The Kern County Air Pollution Control District indicates that ozone originates from the San Joaquin Valley and has been identified as "overwhelming", while PM10 is a result of unpaved roadways and disturbed acreage.

Water Quality Comments

Caltrans acquired a statewide permit with the State Water Resource Control Board that addresses responsibility regarding storm water run off from Caltrans right of way. This segment does not have any year-round free flowing streams.

Transit Service/ Modal Options

Bicycle travel is not allowed due to the availability of an alternate route from the Los Angeles/Kern County line to Silver Queen Road. Kern Regional Transit offers fixed route service that includes: Bakersfield, Mojave, Palmdale, Lancaster, Rosamond), Boron, California City, and Ridgecrest.

Land Use

Land use for this segment includes the community of Rosamond and various mixed-use developments including commercial, residential, and industrial use. Open space is also present.

Environmental Concerns

"The West Mojave Plan" is a regional Habitat Conservation Plan, which is designed to resolve, endangered and threatened species issues within the Mojave Desert. While the Plan has yet to be finalized, Caltrans will be a signatory to the agreement. Once completed, all future transportation projects will need to consider the West Mojave Plan for potential environmental impacts. Endangered and/or threatened species of concern for this segment include the following; Gray Vireo, Le Conte's Thrasher, Long-billed curlew, Snowy Plover, Swainson's Hawk, Vermilion Flycatcher, Mojave Ground Squirrel, Tehachapi Pocket Mouse, Yellow-Eared Pocket Mouse, Desert Tortoise, Alkali Mariposa Lily, Charlotte's Desert Cymopterus, Kern Buckwheat, and Mojave Tarplant. Noxious weeds found in the area include the following; Yellow Star Thistle, Halogeton, Perennial Pepperweed-Lepidium, Russian Thistle, and Saltcedar.

Right of Way Comments

Right of way width varies from 198 ft (60.35 m) to 420 ft (128 m) with three freeway interchanges that include additional width. The entire segment is held in fee and is Access Controlled.

Highway Operation Factors

Traffic Forecasts		Design Hour Volumes		Level of Service	
2001 AADT	15726	2001 DHV	1556	2001	A
2011 AADT	20131	2011 DHV	1943	2011	B
2021 AADT	24540	2021 DHV	2487	2021	B

Calculation Factors

Fatality + Injury Accident Rate	0.13	% Traffic Growth (0-10 yrs)	2.5%	Percent Trucks	9%
Fatality + Injury Statewide Avg Rate	0.21	% Traffic Growth (10-20 yrs)	2.0%	Percent RV's	2%
Total Accident Rate	0.30	Directional Split	60/40	Percent Buses	1%
Total Statewide Avg Rate	0.52	Terrain	Variable		

SR 14 SEGMENT FACT SHEET

Length in km	10.36	**Length mi:**	6.44
KP Back	20.33	**Back PM**	12.63
KP Ahead	30.85	**Ahead PM**	19.07

Present Facility 4-Lane Conventional/2-Lane Conventional

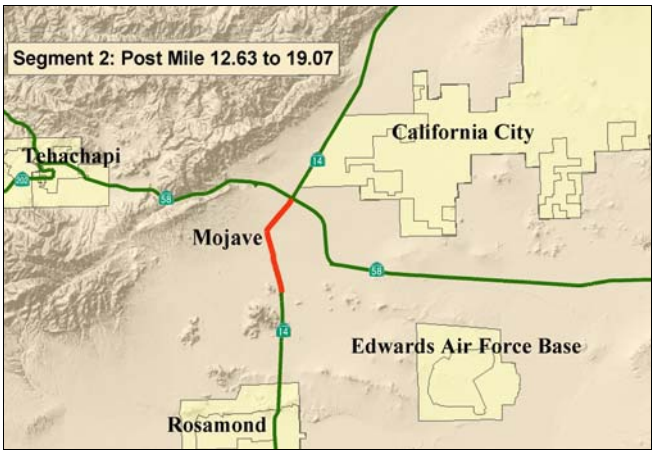
Present LOS C

Concept Facility 6-Lane Conventional

Concept LOS C

Ultimate Facility 6-Lane Freeway

Segment Location



Segment Description

This segment is a 4-lane conventional facility, with a posted speed limit of 65 mph (89 km/h), reducing down to 35 mph (56.33 km/h) at PM 16.07 (KP 25.86) through the community of Mojave. At PM 17.46 (KP 28.09) this facility becomes a 2-lane conventional highway with a posted speed limit of 55 mph (89 km/h) and becoming a 4-lane divided highway again at PM 18.76 (KP 30.19). The majority of the highway is tangent and level. Future traffic volumes including truck traffic from the south through Mojave heading to SR 58 for this segment should be closely monitored for potential congestion. An at grade railroad crossing exists in the community of Mojave that increases traffic congestion and delays to traveling motorists. A history of traffic information for this segment is not available due to recent major roadway and traffic circulation changes.

Route Concept Improvement Recommendations

As traffic numbers increase, an alternate alignment for SR 14 should be studied that routes vehicles from the south end of Mojave to the east junction of the SR 58 Freeway. Conduct traffic studies within the community of Mojave that include an analysis of delay, average travel speed, turn movements, and accidents. Install an interregional transit transfer center within the community of Mojave that combines the services of Kern Regional Transit, Greyhound, and Amtrak Thruway.

Programmed Projects

No capacity or operational improvements are currently programmed for this segment.

Highway Network Affiliation

Functional Classification: Principal Arterial

National Hwy System	Yes	**Scenic Highway**	Not a Scenic Highway
California Freeway _ Expressway System	Yes	**National Truck Network**	NTN STAA Trucks
STRAHNET	Yes	**Life Line**	Yes
Regionally Significant	Yes	**IRRS**	Yes

Highway Information

	Units	Feet	Meters
Average Median Width		25	8
Average Shoulder Width		11	3
Average Lane Width		12	3.6

SR 14 SEGMENT FACT SHEET

Air Quality Comments

This segment is classified as Serious Non-attainment for Ozone and Moderate Non-attainment for PM10. The Kern County Air Pollution Control District indicates that ozone originates from the San Joaquin Valley and has been identified as "overwhelming", while PM10 is a result of unpaved roadways and disturbed acreage.

Water Quality Comments

The Department of Transportation has acquired a statewide permit with the State Water Resource Control Board that addresses the Department's responsibility regarding storm water run off from the Department's Right of Way. This segment does not have any year-round free flowing streams.

Transit Service/ Modal Options

Kern Regional Transit offers fixed route service which includes: Bakersfield to/from Mojave, Mojave to/from Palmdale/Lancaster (serving Rosamond), Mojave to/from Boron, Mojave to/from California City, and California City to/from Ridgecrest. Greyhound Bus lines Inc. operates service on SR 14 through Mojave, offering connections to Bakersfield, Los Angeles, Barstow, and Las Vegas. Amtrak Thruway Bus service operates on SR 14 through Mojave providing connections to Los Angeles, Palmdale/Lancaster, Victorville, Barstow and Las Vegas.

Land Use

Land use for this segment includes the community of Mojave, which includes mixed-use residential, commercial, and industrial zoning.

Environmental Concerns

"The West Mojave Plan" is a regional Habitat Conservation Plan, which is designed to resolve, endangered and threatened species issues within the Mojave Desert. While the Plan has yet to be finalized, The California Department of Transportation will be a signatory to the agreement. Once completed, all future transportation projects will need to consider the West Mojave Plan for potential environmental impacts. Endangered and/or threatened species of concern for this segment include the following; Gray Vireo, Le Conte's Thrasher, Long-billed curlew, Snowy Plover, Swainson's Hawk, Vermilion Flycatcher, Mojave Ground Squirrel, Tehachapi Pocket Mouse, Yellow-Eared Pocket Mouse, Desert Tortoise, Alkali Mariposa Lily, Charlotte's Desert Cymopterus, Kern Buckwheat, and Mojave Tarplant. Noxious weeds found in the area include the following; Yellow Star Thistle, Halogeton, Perennial Pepperweed-Lepidium, Russian Thistle, and Saltcedar.

Right of Way Comments

200 ft (60.96 m) widths reduce to 100 ft (30.48 m) from the Rail Road overpass to Business 58 and the end of the segment, PM 15.35 to PM 16.07 (KP 24.70 to KP 25.86), right of way is by easement from Southern Pacific Railroad. Right of Way for this segment consists of easement and fee thourghout with no access control.

Highway Operation Factors

Traffic Forecasts		Design Hour Volumes		Level of Service	
2001 AADT	7601	2001 DHV	648	2001	C
2011 AADT	9730	2011 DHV	829	2011	C
2021 AADT	11861	2021 DHV	1011	2021	D

Calculation Factors

Fatality + Injury Accident Rate	0.25	% Traffic Growth (0-10 yrs)	2.5%	Percent Trucks	10%
Fatality + Injury Statewide Avg Rate	0.44	% Traffic Growth (10-20 yrs)	2.0%	Percent RV's	2%
Total Accident Rate	0.71	Directional Split	60/40	Percent Buses	1%
Total Statewide Avg Rate	0.92	Terrain	Variable		

SR 14 SEGMENT FACT SHEET

Length in km	11.39	**Length mi:**	7.07
KP Back	30.85	**Back PM**	19.07
KP Ahead	42.06	**Ahead PM**	26.14

Present Facility 2-Lane Conventional

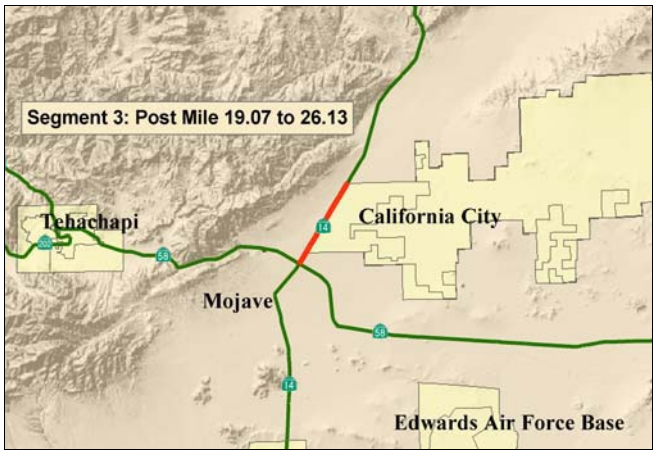
Present LOS D

Concept Facility 4-Lane Freeway

Concept LOS C

Ultimate Facility 4-Lane Freeway

Segment Location



Segment Description

This segment is a 2-lane conventional highway with a posted speed limit of 65 mph (105 km/h). A 4-way stop sign controlled intersection is located at the intersection of SR 14 and California City Boulevard/Randsburg Cutoff Road. After the North Mojave STIP improvement, this segment will be a 4-lane expressway with an interchange at the SR 14 and California City/Randsburg Cutoff Road intersection. The section of 2-lane highway from PM R21.84 (KP R35.15) to PM 26.14 (KP 42.06) is signed as a daytime headlight section. Operational efficiency has decreased and safety appears to have improved at the California City blvd. intersection as the result of the recent installation of a 4-way stop sign (due to stop-and-go traffic).

Route Concept Improvement Recommendations

Convert existing 2--lane conventional highway to a 4-lane freeway or expressway, and construct an interchange at the intersection of SR 14 and California City Boulevard/Randsburg Cutoff Road as programmed under the North Mojave Four Lane STIP.

Programmed Projects

Kern 14 PM 16.20 to PM 26.00 (KP 26.10 to KP 41.60) - North Mojave Four Lane - Convert existing two-lane conventional highway to a four-lane expressway and construct an interchange at California City Boulevard/Randsburg Cutoff Road. Future operatonal improvements might include signal installation and improved signal timing.

Highway Network Affiliation

Functional Classification: Principal Arterial

National Hwy System	Yes	**Scenic Highway**	Eligible
California Freeway _ Expressway System	Yes	**National Truck Network**	NTN STAA Trucks
STRAHNET	No	**Life Line**	Yes
Regionally Significant	Yes	**IRRS**	Yes

Highway Information

	Units	Feet	Meters
Average Median Width		0	0
Average Shoulder Width		9	3
Average Lane Width		12	3.6

SR 14 SEGMENT FACT SHEET

Air Quality Comments

This segment is classified as Serious Non-attainment for Ozone and Moderate Non-attainment for PM10. The Kern County Air Pollution Control District indicates that ozone originates from the San Joaquin Valley and has been identified as "overwhelming". PM10 is a result of unpaved roadways and disturbed acreage.

Water Quality Comments

The Department of Transportation has acquired a statewide permit with the State Water Resource Control Board that addresses the Department's responsibility regarding storm water run off from the Department's Right of Way. This segment does not have any year-round free flowing streams, but does include seasonal drainage locations at PM 20.20 (KP 32.50), and PM 25.70 (KP 41.36).

Transit Service/ Modal Options

Kern Regional Transit offers fixed route service that includes: Bakersfield, Mojave, Palmdale, Lancaster, (serving Rosamond), Boron, California City, and Ridgecrest.

Land Use

Land use for this segment includes range land, open space, and private land within an undeveloped area of Kern County and the California City Limits.

Environmental Concerns

"The West Mojave Plan" is a regional Habitat Conservation Plan, which is designed to resolve, endangered and threatened species issues within the Mojave Desert. While the Plan has yet to be finalized, The California Department of Transportation will be a signatory to the agreement. Once completed, all future transportation projects will need to consider the West Mojave Plan for potential environmental impacts. Endangered and/or threatened species of concern for this segment include the following: Le Conte's Thrasher, Swainson's Hawk, Vermilion Flycatcher, Mojave Ground Squirrel, Mojave River Vole, Tehachapi Pocket Mouse, Yellow-Eared Pocket Mouse, Desert Tortoise, Alkali Mariposa Lily, Charlotte's, Desert Cymopterus, Kern Buckwheat, and Mojave Tarplant. Noxious weeds found in the area include the following: Yellow Starthistle, Halogeton, Perennial Russian Thistle, and Saltcedar.

Right of Way Comments

Right of Way is primarily by easement throughout the segment. Easements vary from 100 ft (30.48 m) to 400 ft (121.92 m) in width. A stretch of divided multi-lane at California City boulevard has a Right of Way width of 410 ft (124.97 m) at PM 20.65 to PM 21.96 (KP 33.23 to KP 35.34). There is no access control for this segment.

Highway Operation Factors

Traffic Forecasts		Design Hour Volumes		Level of Service	
2001 AADT	6435	2001 DHV	521	2001	D
2011 AADT	7844	2011 DHV	635	2011	A*
2021 AADT	9103	2021 DHV	737	2021	A*

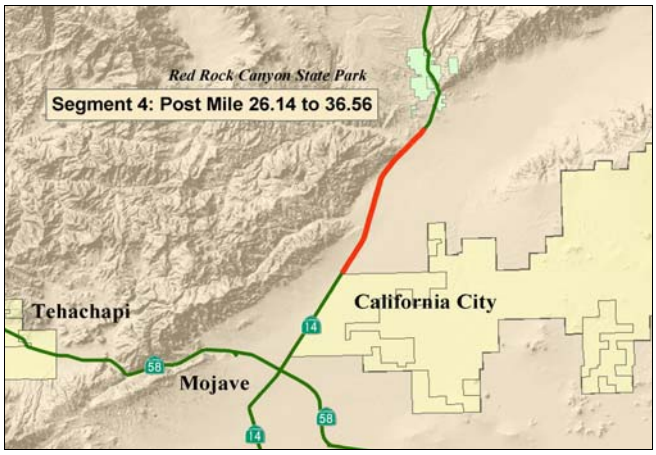
Calculation Factors

Fatality + Injury Accident Rate	0.59	% Traffic Growth (0-10 yrs)	2.0%	Percent Trucks	12%
Fatality + Injury Statewide Avg Rate	0.45	% Traffic Growth (10-20 yrs)	1.5%	Percent RV's	5%
Total Accident Rate	1.06	Directional Split	30/70	Percent Buses	1%
Total Statewide Avg Rate	0.94	Terrain	Variable		

SR 14 SEGMENT FACT SHEET

Length in km	16.78	**Length mi:**	10.43
KP Back	42.05	**Back PM**	26.14
KP Ahead	58.84	**Ahead PM**	36.56
Present Facility	4-Lane Expressway		
Present LOS	A		
Concept Facility	4-Lane Freeway		
Concept LOS	C		
Ultimate Facility	4-Lane Freeway		

Segment Location



Segment Description

This segment is a 4-lane expressway with a posted speed limit of 65 mph (105 km/h). The north end of the segment at PM 36.56 (KP 58.8) includes the Red Rock Randsburg Road turnoff. Caltrans Intergovernmental Review needs to work closely with Kern County as development occurs in this area to ensure safe and efficient highway operation. There are currently no operational concerns for this segment.

Route Concept Improvement Recommendations

Install an acceleration lane for southbound traffic at the Jawbone Road access PM 35.41 (KP 56.98). The section from PM 34.9 (KP 58.83) to PM 36.56 (KP 58.84) does not have access control. Access control should be purchased for this 1.15 mile (1.85 kilometer) section and a frontage road network installed to ensure a seamless access controlled facility. The intersection of SR 14 with Red Rock Randsburg Road at PM 36.56 (KP 58.84) should be realigned and upgraded. Drainage improvements are needed from PM 35.10 (KP 56.50) to PM 37.10 (KP 59.70). The median should be widened to achieve a standard width. Interchanges will likely be needed as development occurs.

Programmed Projects

No capacity or operational improvements are currently programmed for this segment.

Highway Network Affiliation

Functional Classification: Principal Arterial

National Hwy System	Yes	**Scenic Highway**	Eligible
California Freeway _ Expressway System	Yes	**National Truck Network**	NTN STAA Trucks
STRAHNET	No	**Life Line**	Yes
Regionally Significant	Yes	**IRRS**	Yes

Highway Information

	Units	Feet	Meters
Average Median Width		10	3
Average Shoulder Width		11	3
Average Lane Width		12	3.6

SR 14 SEGMENT FACT SHEET

Air Quality Comments

This segment is classified as Serious Non-attainment for Ozone and Moderate Non-attainment for PM10. The Kern County Air Pollution Control District indicates that ozone orignates from the San Joaquin Valley and has been identified as "overwhelming". PM10 is a result of unpaved roadways and disturbed acreage.

Water Quality Comments

The Department of Transportation has acquired a statewide permit with the State Water Resource Control Board that addresses the Department's responsibility regarding storm water run off from the Department's Right of Way. This segment does not have any year-round free flowing streams, but does include seasonal drainage locations at PM 29.50 (KP 47.48), PM 35.10 (KP 56.49), and PM 36.10 (KP 58.10).

Transit Service/ Modal Options

Kern Regional Transit offers fixed route service that includes: Bakersfield, Mojave, Palmdale, Lancaster, (serving Rosamond), Boron, California City, and Ridgecrest.

Land Use

Land use for this segment includes conservation, recreation, and range land. Some private parcels are also within this segment area, which may have the potential for development.

Environmental Concerns

"The West Mojave Plan" is a regional Habitat Conservation Plan, which is designed to resolve, endangered and threatened species issues within the Mojave Desert. While the Plan has yet to be finalized, The California Department of Transportation will be a signatory to the agreement. Once completed, all future transportation projects will need to consider the West Mojave Plan for potential environmental impacts. Endangered and/or threatened species of concern for this segment include the following: Le Conte's Thrasher, Swainson's Hawk, Vermilion Flycatcher, Mojave Ground Squirrel, Mojave River Vole, Tehachapi Pocket Mouse, Yellow-Eared Pocket Mouse, Desert Tortoise, Alkali Mariposa Lily, Charlotte's, Desert Cymopterus, Kern Buckwheat, and Mojave Tarplant. Noxious weeds found in the area include the following: Yellow Starthistle, Halogeton, Perennial Russian Thistle, and Saltcedar.

Right of Way Comments

Right of way varies and is held in fee and easement for this segment. Right of way widths vary from 400 ft (121.92 m) to 175 ft (53.34 m) in the Jawbone area. The State has access control rights on most of this segment, except for the section from PM 34.9 (KP 58.83) to PM 36.56 (KP 58.84).

Highway Operation Factors

Traffic Forecasts		Design Hour Volumes		Level of Service	
2001 AADT	6063	2001 DHV	531	2001	A
2011 AADT	6341	2011 DHV	555	2011	A
2021 AADT	6633	2021 DHV	584	2021	A

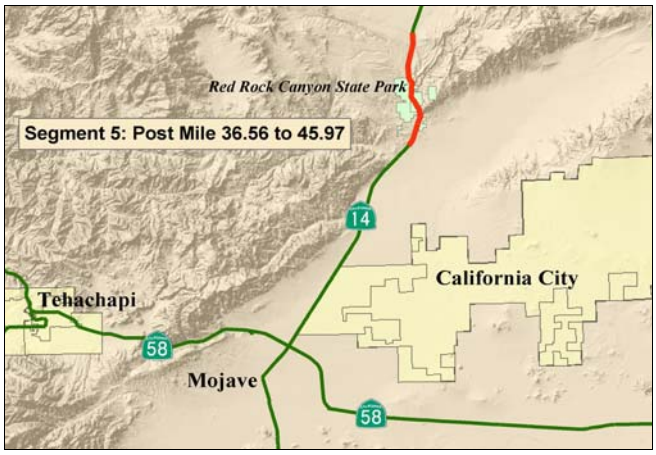
Calculation Factors

Fatality + Injury Accident Rate	0.10	% Traffic Growth (0-10 yrs)	0.5%	Percent Trucks	12%
Fatality + Injury Statewide Avg Rate	0.45	% Traffic Growth (10-20 yrs)	0.5%	Percent RV's	5%
Total Accident Rate	0.18	Directional Split	47/53	Percent Buses	0.5%
Total Statewide Avg Rate	0.98	Terrain	Rolling		

SR 14 SEGMENT FACT SHEET

Length in km	15.14	**Length mi:**	9.41
KP Back	58.84	**Back PM**	36.56
KP Ahead	74.01	**Ahead PM**	45.97
Present Facility	4-Lane Expressway		
Present LOS	A		
Concept Facility	4-Lane Freeway		
Concept LOS	C		
Ultimate Facility	4-Lane Freeway		

Segment Location



Segment Description

This segment is a 4-lane expressway with a posted speed limit of 65 mph (105 km/h). The south end of the segment at PM 36.56 (KP 58.84) includes the Red Rock Randsburg Road turnoff. Red Rock Canyon State Park is located between PM 37.50 (KP 60.35) and PM 42.80 (KP 68.88). The cross section, horizontal alignment, and vertical alignment are less than desirable for this segment. There is also the potential for rock-fall hazards along this segment. There is an increase in the frequency of vehicles losing control between PM 39 (KP 62.76) to PM 40 (KP 64.37) in comparison to the remaining segment due to the drivers' inability to negotiate road geometry beyond posted speeds.

Route Concept Improvement Recommendations

Shoulder widening and median improvements are needed to bring this segment up to operational standards. Install acceleration and deceleration lanes on SR 14 for the Red Rock Canyon Visitor Center access road at PM 40.53 (KP 65.2). Evaluate and maintain the existing drainage network. Cross section improvements should occur for sections of this segment. Areas with reoccurring Rock-fall should be closely monitored and protection should be installed for areas of concern.

Programmed Projects

No capacity or operational improvements are currently programmed for this segment.

Highway Network Affiliation

Functional Classification: Principal Arterial

National Hwy System	Yes	**Scenic Highway**	Eligible
California Freeway _ Expressway System	Yes	**National Truck Network**	NTN STAA Trucks
STRAHNET	No	**Life Line**	Yes
Regionally Significant	Yes	**IRRS**	Yes

Highway Information

	Units	Feet	Meters
Average Median Width		0	0
Average Shoulder Width		4	1
Average Lane Width		12	3.6

SR 14 SEGMENT FACT SHEET

Air Quality Comments

This segment is classified as Serious Non-attainment for Ozone and Moderate Non-attainment for PM10. The Kern County Air Pollution Control District indicates that ozone originates from the San Joaquin Valley and has been identified as "overwhelming", while PM10 is a result of unpaved roadways and disturbed acreage.

Water Quality Comments

The Department of Transportation has acquired a statewide permit with the State Water Resource Control Board that addresses the Department's responsibility towards storm water run off from the Department's Right of Way. This segment does not have any year-round free flowing streams, but does include seasonal drainage locations at PM 36.70 (KP 59.06), PM 37.30 (KP 60.23), PM 39.0 0(KP 62.76), and PM 44.90 (KP 72.26).

Transit Service/ Modal Options

Kern Regional Transit offers fixed route service that includes: Bakersfield to/from Mojave, Mojave to/from Palmdale/Lancaster (serving Rosamond), Mojave to/from Boron, Mojave to/from California City, and California City to/from Ridgecrest.

Land Use

Land use for this segment includes Red Rock State Park, and includes recreation such as, hiking, biking, wildlife viewing, geology, etc.

Environmental Concerns

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Right of Way Comments

Right of Way from PM 36.56 (KP 58.84) to PM 45.97 (KP 73.98) varies from a 100 ft (30.48 m) to 400 ft (121.92 m) wide easement granted to the State of California by various grantors. Access control is present on this segment.

Highway Operation Factors

Traffic Forecasts		Design Hour Volumes		Level of Service	
2001 AADT	7272	2001 DHV	629	2001	A
2011 AADT	7644	2011 DHV	658	2011	A
2021 AADT	7995	2021 DHV	692	2021	A

Calculation Factors

Fatality + Injury Accident Rate	0.25	% Traffic Growth (0-10 yrs)	0.5%	Percent Trucks	12%
Fatality + Injury Statewide Avg Rate	0.42	% Traffic Growth (10-20 yrs)	0.5%	Percent RV's	5%
Total Accident Rate	0.41	Directional Split	30/70	Percent Buses	1%
Total Statewide Avg Rate	0.97	Terrain	Variable		

SR 14 SEGMENT FACT SHEET

Length in km	25.73	**Length mi:**	15.99
KP Back	74.01	**Back PM**	45.97
KP Ahead	99.73	**Ahead PM**	61.97
Present Facility	2-Lane Conventional		
Present LOS	D		
Concept Facility	4-Lane Freeway		
Concept LOS	C		
Ultimate Facility	4-Lane Freeway		

Segment Location

Segment Description

This segment is a 2-lane conventional highway with a posted speed limit of 65 mph (105 km/h). After the Freeman Gulch STIP improvement, this segment will be a 4-lane expressway. Shoulder widening would improve operations on this segment.

Route Concept Improvement Recommendations

Convert existing 2-lane conventional highway to a 4-lane expressway as programmed under the Freeman Gulch 4- Lane STIP.

Programmed Projects

Kern 14 PM 45.90 (KP 73.96) to PM 62.30 (KP 100.2) - Freeman Gulch Widening - Convert existing 2-lane conventional highway to a 4-lane expressway.

Highway Network Affiliation

Functional Classification: Principal Arterial

National Hwy System	Yes	**Scenic Highway**	Eligible
California Freeway _ Expressway System	Yes	**National Truck Network**	NTN STAA Trucks
STRAHNET	No	**Life Line**	Yes
Regionally Significant	Yes	**IRRS**	Yes

Highway Information

Units	**Feet**	**Meters**
Average Median Width	0	0
Average Shoulder Width	4	1
Average Lane Width	12	3.6

SR 14 SEGMENT FACT SHEET

Air Quality Comments

This segment is classified as Serious Non-attainment for Ozone and Moderate Non-attainment for PM10. The Kern County Air Pollution Control District indicates that ozone originates from the San Joaquin Valley and has been identified as "overwhelming", while PM10 is a result of unpaved roadways and disturbed acreage.

Water Quality Comments

The Department of Transportation has acquired a statewide permit with the State Water Resource Control Board that addresses the Department's responsibility regarding storm water run off from the Department's Right of Way. This segment does not have any year-round free flowing streams, but does include seasonal drainage locations at PM 52.30 (KP 84.17), PM 56.3 (KP 90.61), and PM 58.50 (KP 94.15).

Transit Service/ Modal Options

Kern Regional Transit services offers fixed route service that includes: Bakersfield to/from Mojave, Mojave to/from Palmdale/Lancaster (serving Rosamond), Mojave to/from Boron, Mojave to/from California City, and California City to/from Ridgecrest.

Land Use

Land use for this segment includes conservation, recreation, and range land. Some private parcels are also within this segment area, which may have the potential for development.

Environmental Concerns

"The West Mojave Plan" is a regional Habitat Conservation Plan, which is designed to resolve, endangered and threatened species issues within the Mojave Desert. While the Plan has yet to be finalized, The California Department of Transportation will be a signatory to the agreement.. Once completed, all future transportation projects will need to consider the West Mojave Plan for potential environmental impacts. Endangered and/or threatened species of concern for this segment include the following: Least Bell's Vireo: Le Conte's Thrasher, Summer Tanager, Swainson's Hawk, Vermilion Flycatcher Mojave Ground Squirrel, Mojave River Vole, Tehachapi Pocket Mouse, Yellow-Eared Pocket Mouse, Desert Tortoise, Alkali Mariposa Lily, Charlotte's Phacelia, Desert Cymopterus, Kern Buckwheat, and Mojave Tarplant. Noxious weeds found in the area include Yellow Starthistle, Halogeton, Perennial Pepperweed, Russian Thistle, Saltcedar.

Right of Way Comments

Right of Way from PM 57.50 (KP 92.53) to 61.97 (KP 99.73) is by a 100.00 ft (30.48 m) to 400 ft (121.92 m) wide easement granted to the State of California by various grantors.

Highway Operation Factors

Traffic Forecasts		Design Hour Volumes		Level of Service	
2001 AADT	2992	2001 DHV	591	2001	D
2011 AADT	3129	2011 DHV	618	2011	A*
2021 AADT	3273	2021 DHV	647	2021	A*

Calculation Factors

Fatality + Injury Accident Rate	0.25	% Traffic Growth (0-10 yrs)	0.5%	Percent Trucks	12%
Fatality + Injury Statewide Avg Rate	0.34	% Traffic Growth (10-20 yrs)	0.5%	Percent RV's	5%
Total Accident Rate	0.43	Directional Split	40/60	Percent Buses	1%
Total Statewide Avg Rate	0.68	Terrain	Rolling		

SR 14 SEGMENT FACT SHEET

Length in km	4.17	**Length mi:**	2.59
KP Back	99.73	**Back PM**	61.97
KP Ahead	103.90	**Ahead PM**	64.56
Present Facility	4-Lane Expressway		
Present LOS	A		
Concept Facility	4-Lane Freeway		
Concept LOS	C		
Ultimate Facility	4-Lane Freeway		

Segment Location

Segment Description

This segment is a 4-lane expressway with a posted speed limit of 65 mph (105 km/h). This segment connects SR 14 with U.S. 395, of which both are a part of the Eastern Sierra Corridor, connecting Southern California with northwestern Nevada, Oregon, Washington, Idaho, and Montana. There are operational concerns at this time.

Route Concept Improvement Recommendations

Develop an access management plan for the Homestead area, and convert this segment to freeway standards.

Programmed Projects

No capacity or operational improvements are currently programmed for this segment.

Highway Network Affiliation

Functional Classification:	Principal Arterial		
National Hwy System	Yes	**Scenic Highway**	Eligible
California Freeway & Expressway System	Yes	**National Truck Network**	NTN STAA Trucks
STRAHNET	No	**Life Line**	Yes
Regionally Significant	Yes	**IRRS**	Yes

Highway Information

	Units	Feet	Meters
Average Median Width		95	30
Average Shoulder Width		11	3
Average Lane Width		12	3.6

SR 14 SEGMENT FACT SHEET

Air Quality Comments

This segment is classified as Serious Non-attainment for Ozone and Moderate Non-attainment for PM10. The Kern County Air Pollution Control District indicates that ozone originates from the San Joaquin Valley and has been identified as "overwhelming", while PM10 is a result of unpaved roadways and disturbed acreage.

Water Quality Comments

The Department of Transportation has acquired a statewide permit with the State Water Resource Control Board that addresses the Department's responsibility regarding storm water run off from the Department's Right of Way. This segment does not have any year-round free flowing streams, but does include a seasonal drainage location at PM 62.00 (KP 99.78).

Transit Service/ Modal Options

Kern Regional Transit services offers fixed route service that includes: Bakersfield to/from Mojave, Mojave to/from Palmdale/Lancaster (serving Rosamond), Mojave to/from Boron, Mojave to/from California City, and California City to/from Ridgecrest. An airport shuttle service operates from the Inyokern Airport from/to the Los Angeles (LAX) Airport.

Land Use

Land use for this segment includes conservation, recreation, open space, and range land. Some private parcels are also within this segment area, which may have the potential for development.

Environmental Concerns

"The West Mojave Plan" is a regional Habitat Conservation Plan, which is designed to resolve, endangered and threatened species issues within the Mojave Desert. While the Plan has yet to be finalized, The California Department of Transportation will be a signatory to the agreement. Once completed, all future transportation projects will need to consider the West Mojave Plan for potential environmental impacts. Endangered and/or threatened species of concern for this segment include the following: Least Bell's Vireo, Le Conte's Thrasher, Summer Tanager, Swainson's Hawk, Vermilion Flycatcher, Mojave Ground Squirrel, Mojave River Vole, Tehachapi Pocket Mouse, Yellow-Eared Pocket Mouse, Desert Tortoise, Alkali Mariposa Lily, Charlotte's Phacelia, Desert Cymopterus, Kern Buckwheat, and Mojave Tarplant. Noxious weeds found in the area include Yellow Starthistle, Halogeton, Perennial Pepperweed, Russian Thistle, and Saltcedar.

Right of Way Comments

Right of Way from PM 62.62 (KP 100.78) to PM 62.94 (KP 101.29) is by a 214.97 ft wide (65.92 m) adjacent drainage easement granted to the State of California by the BLM with fee and easement throughout segment.

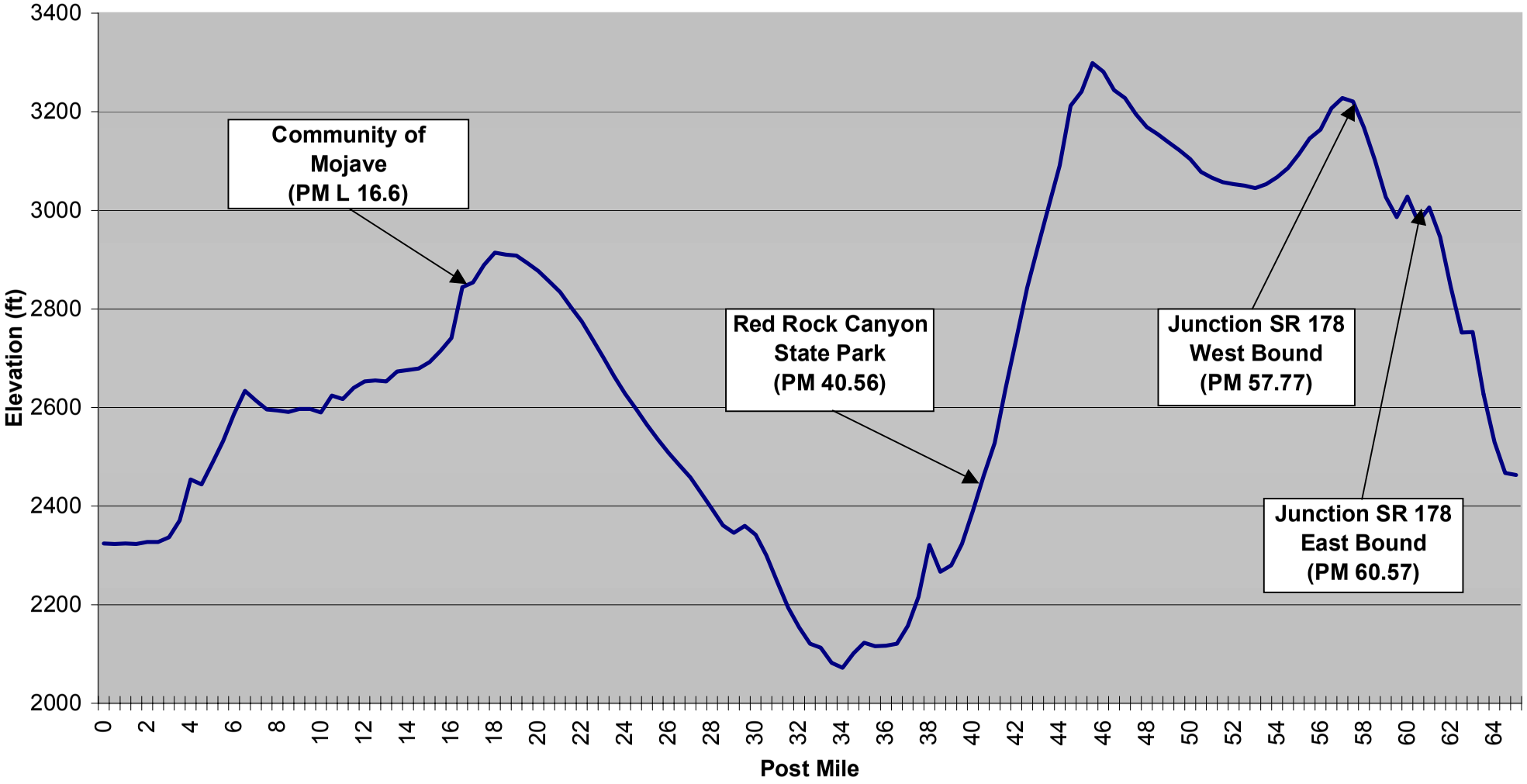
Highway Operation Factors

Traffic Forecasts		Design Hour Volumes		Level of Service	
2001 AADT	2992	2001 DHV	591	2001	A
2011 AADT	3192	2011 DHV	618	2011	A
2021 AADT	3273	2021 DHV	647	2021	A

Calculation Factors

Fatality + Injury Accident Rate	0.12	% Traffic Growth (0-10 yrs)	0.5%	Percent Trucks	12%
Fatality + Injury Statewide Avg Rate	0.60	% Traffic Growth (10-20 yrs)	0.5%	Percent RV's	5%
Total Accident Rate	0.23	Directional Split	40/60	Percent Buses	1%
Total Statewide Avg Rate	1.60	Terrain	Rolling		

STATE ROUTE 14 Elevation Profile
(US Customary Units)



Elevations are Approximate

GLOSSARY

Concept Facility	**Highway facility type and characteristics considered viable with or without improvement within the 20-year planning period given financial, environmental, planning and engineering factors.**
Concept LOS	**Highest and best Level of Service that can be achieved in the 20-year planning period based on the concept facility.**
Design Hour Volume	**30th Highest Hour Traffic Volume in a selected year for a given segment.**
Directional split	**The percentage of traffic in the peak direction during the peak hour.**
Functional Classification	**Guided by Federal legislation, refers to a process by which streets and highways are grouped into classes or systems according to the character of the service that is provided (i.e. Principal Arterial, Minor Arterial Roads, Collector Roads and Local Roads).**
Interregional Road System	**Statewide network of legislatively identified interregional routes, outside urbanized areas, that provides access to, and links between, the state's economic centers, major recreational areas, urban and rural regions.**
Level of Service (LOS)	**A qualitative rating of the effectiveness of a transportation system in serving travel. Letters A (best) through F (worst).**
Lifeline Route	**One of a selected number of State Highway routes that is first to be structurally updated in non-emergency times and the first to be structurally repaired and cleared in times of emergency.**
National Highway System	**Federal-designated system of major highways in each state, including all numbered interstate highways.**
Present Facility	**Highway type and general characteristics at the time of this study.**
Present LOS	**Existing Level of Service.**
Programmed Projects	**Capacity-enhancing, safety and/or operational improvement projects programmed through STIP or SHOPP.**
Route Designations	**Identifies whether or not the subject segment of a route is designated as being part of the National Highway System (NHS); Interregional Highway System (IRRS); California Freeway/Expressway (F & E), Scenic Highway; National Truck Network (NTN); Strategic Highway Network (STRAHNET); and Highways of Regional Significance.**

ACRONYMS

AADT	**Average Annual Daily Traffic**
ADT	**Average Daily Traffic**
Caltrans	**California Department of Transportation**
IRRS	**Interregional Road System**
KP	**Kilometer Post**
KM	**Kilometer Mile**
LOS	**Level of Service**
KRN	**Kern County**
NHS	**National Highway System**
NTN	**National Truck Network**
PM	**Post Mile**
RV	**Recreational Vehicle**
SHOPP	**State Highway Operation and Protection Program**
STAA	**Surface Transportation Assistance Act**
STIP	**State Transportation Improvement Program**
STRAHNET	**Strategic Highway Network**
TCR	**Transportation Concept Report**
V/C	**Volume to Capacity Ratio**

SOURCES of INFORMATION

Transportation Research Board, *Highway Capacity Manual*/Software, 2000

Caltrans Route Concept Report, SR 14 - 1988

***Kern County Regional Transportation Plan* - 2000**

Traffic Accident Surveillance and Analysis System, Table B, Accident Data (10/01/93) – (09/30/03)